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ABSTRACT

A comparison of costs for computer-based searching of Psychological Abstracts and Educational Resources Information Center (ERIC) systems by the New York State Library at Albany was produced by combining data available from search request forms and from bills from the contract subscription service, the State University of New York-Bio-Communication Network (SUNY-BCN). These data were used to compute costs in commercial pricing systems. Charges for peripheral equipment, which are included in the contract fee, were prorated according to the ratio of use of each data base against the total use for all data bases. Estimates were obtained for comparable peripheral equipment, adjusted for percentage of time used, and added to search costs to complete the comparison. Differences in cost and access to the computer were noted, and it was recommended that the New York State Library remain with the SUNY-BCN system and plan also to join the Lockheed DIALOG system for data bases not available from SUNYBCN. A fee schedule that includes a surcharge for development and refinement of search and retrieval procedures also was recommended. (CH)

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A COMPARISON OF COSTS OF SEARCHING THE MACHINE-READABLE DATA BASES ERIC AND PSYCHOLOGICAL ABSTRACTS IN AN ANNUAL SUBSCRIPTION RATE SYSTEM AGAINST COSTS ESTIMATED FOR THE SAME SEARCHES DONE IN THE LOCKHEED DIALOG SYSTEM AND THE SYSTEM DEVELOPMENT CORPORATION FOR ERIC, AND THE LOCKHEED DIALOG SYSTEM AND PASAT FOR PSYCHOLOGICAL ABSTRACTS

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The New York State Library at Albany has been providing searches on the machine-readable data bases ERIC and Psychological Abstracts through a contract with the Central Administration of the State University of New York. When annual costs were raised sharply by SUNY a question arose as to whether rates of commercial data base services compared favorably with the new contract rates.

Commercial systems charge an hourly rate for use of each data base, plus an off-line[1] charge for printing citations. Bio-Communications Network, the system operated by Central Administration, provides up to seventy hours per data base a month for an annual subscription fee and charges for off-line printing by the page, not by the citation.[2]

More than data base time and printing charges are involved in search costs. Peripheral equipment is also necessary. See Appendix 1 for comparison chart.

To test the hypothesis that the contract arrangement with the Central Administration would produce searches at a lower cost than a commercial service it was decided to compare pricing systems. Suitable data existed but had never been utilized for comparative purposes.

The ERIC data base is available commercially through both Lockheed Dialog and System Development Corporation. Computer time costs, connection costs, and print out charges from these two commercial services were used in the comparison with SUNY-BCN[3] charges for ERIC searches.

The Psychological Abstracts data base is available in only three ways: PATELL, Psychological Abstracts Tape Edition Lease or License,[4] PADAT, Psychological Abstracts Direct Access Terminal, and PASAR, Psychological Abstracts Search and Retrieval. With PATELL, the data base tapes are run on the lessee's computer. Both Lockheed Dialog and SUNY-BCN get the tapes from Psychological Abstracts under this plan. PADAT is available at this time only through Lockheed Dialog or several university systems (SUNY-BCN is one) which serve exclusive communities. To set up cost comparison figures for another service besides Lockheed Dialog and SUNY-BCN, it was decided to use PASAR. The service it provides is relatively expensive, but for users with a small number of requests in a position to pass along all or part costs to the client, it would present a far better solution than installing a terminal.

Record forms for searches done on the ERIC and Psychological Abstracts data bases were examined for six month periods. Because of reporting and billing systems, the six months chosen were July 1975 through December 1975 for ERIC searches,[5] and August 1975 through January 1976 for Psychological Abstracts searches.

Costs to the State Library for peripheral equipment such as the terminal,[6] modem,[7] and telephone line connection to the terminal are lower than similar equipment costs would be from other sources. Two reasons for this are that SUNY-BCN is a non-profit organization and the computer is located in the same city. Both System Development Corporation and Lockheed Dialog use a computer which is located in

California although it may be accessed from major cities. Albany, New York is not one of the access points, so some sort of telephone line arrangement would have to be made to reach an access point.[8] Also, the State Library has a permanent connection with the computer, activated by entering a message on the terminal keyboard. Commercial service charges are based on using a dial-up line, with the user dialing the computer connection number when the terminal is to be used. The dedicated line, more expensive than the dial-up line, is also more convenient, since the computer never gives it a "busy signal".[9]

Because of the variation in possible costs for the peripheral equipment, it was decided to compare them and then estimate the sum that would have to be added to each search cost to allow for the equipment charges.

Search costs would be determined by examining the bills from Central Administration showing the length of time each user was connected to each data base and the total time all users spent on all data bases during the months studied. The percentage of use of each data base could then be used to compute the portion of the total contract fee, which includes peripheral equipment, line, and subscription charges attributable to each data base for that month. Page charges, listed by data base, would be added to the contract fee portion. Since the bills do not show number of times each base was used, this information would be taken from the record form filled out when a client requests a search. This form also lists the number

of citations produced by the search. By comparing the number of forms, the total number of citations, the page charges, and the time charges, the necessary information to compute charges in the commercial systems could be obtained. By adding an estimate for peripheral equipment charges, it would then be possible to compare the cost of an average search in the different pricing systems.

Limitations were as follows:

1. No attempt was made to assess or estimate the quality of the search results.
2. No attempt was made to assess or estimate the efficiency of the intermediary computer program which permits the search strategy to be run in the computer.
3. No attempt was made to determine the efficiency of personnel developing search strategy or entering search data on the terminal keyboard.
4. Peripheral costs, as estimated, were low, since they were based on the cheapest equipment and on dial-up connections.
5. Initial installation charges were pointed out but not included in the estimates for peripheral costs.

Tables showing raw data taken from the search request forms and the SUNY-BCN bills follow.

TABLE I

RAW DATA FROM PSYCHOLOGICAL ABSTRACTS SEARCHES

MONTH	TOTAL NO. OF SEARCHES	TOTAL NO. OF CITATIONS	TOTAL NO. OF PAGES	TOTAL CONNECT TIME
August	13	301	175	3.37
September	28	932	351	6.55
October	30	359	171	8.42
November	29	498	241	6.90
December	24	549	243	5.12
January (1976)	17	454	170	10.26

TABLE II

RAW DATA FROM ERIC SEARCHES

MONTH	TOTAL NO. OF SEARCHES	TOTAL NO. OF CITATIONS	TOTAL NO. OF PAGES	TOTAL CONNECT TIME
July	181	10,277	2,934	14.15
August	139	7,122	3,789	14.81
September	182	10,839	4,000	17.21
October	286	14,701	2,812	13.13
November	255	14,539	5,152	55.57
December	201	11,738	4,470	31.38

The raw data was averaged out by dividing the number of searches done in each month into the total number of pages and citations and into the total amount of time used in connection with the computer. Tables showing these figures follow.

TABLE III

AVERAGE TIME, PAGES, AND CITATIONS FOR A PSYCHOLOGICAL ABSTRACTS SEARCH

MONTH	AVG. TIME (Hrs.)	AVG. NO. PAGES	AVG. NO. CITATIONS
August	0.2592	13.46	23.15
September	0.2339	12.54	33.29
October	0.2807	5.70	11.97
November	0.2379	8.31	17.17
December	0.2133	10.13	22.88
January (1976)	0.6035	10.00	26.71

TABLE IV

AVERAGE TIME, PAGES, AND CITATIONS FOR AN ERIC SEARCH

MONTH	AVG. TIME (Hrs.)	AVG. NO. PAGES	AVG. NO. CITATIONS
July	0.0782	16.21	56.78
August	0.1065	27.26	51.24
September	0.0946	21.98	59.55
October	0.0459	9.83	51.40
November	0.2179	20.20	57.02
December	0.1561	22.24	58.40

Before search costs could be found in the SUNY-BCN system, it was necessary to find the proportionate amount of time spent in searching each data base being studied, as compared to the total time spent searching all data bases so that the appropriate amount of monthly contract charges could be determined.

TABLE V

PERCENTAGE OF MONTHLY CONTRACT TIME USE FOR AN AVERAGE SEARCH ON PSYCHOLOGICAL ABSTRACTS BASE

MONTH	TOTAL CONNECT TIME ALL BASES	PSYCH. ABS. TOTAL TIME	% PSYCH. ABS. USE FOR MONTH	NO. OF PSYCH. ABS. SEARCHES FOR MONTH	% PSYCH. ABS. USE FOR AVG. SEARCH
August	27.17	3.37	12.40	13	0.9538
September	33.53	6.55	19.53	28	0.6975
October	42.64	8.42	19.75	30	0.6583
November	26.32	6.90	26.22	29	0.9041
December	34.61	5.12	14.79	24	0.6163
January (1976)	37.79	10.26	27.15	17	1.5971

TABLE VI

PERCENTAGE OF MONTHLY CONTRACT TIME USE FOR AN AVERAGE SEARCH ON ERIC DATA BASE

MONTH	TOTAL CONNECT TIME ALL BASES	ERIC USE TOTAL TIME	% ERIC USE FOR MONTH	NO. OF EPSIS (a) SEARCHES FOR MONTH	% ERIC USE FOR AVG. SEARCH
July	30.43	14.15	46.50	181	0.2569
August	27.17	14.81	54.51	139	0.3922
September	33.53	17.21	51.33	182	0.2820
October	42.64	13.13	30.79	286	0.1077
November	--	55.57	100.00	255	0.3922
December	--	31.38	100.00	201	0.4975

(a) Not all searches on the ERIC data base from July to October were EPSIS searches. As page charges are billed by data base, not by user identification number, the costs could not be isolated. Non-EPSIS use in September was only .5 hour, as compared to 33.53 hours for EPSIS use so results were not significantly affected.

Search costs could now be found in the SUNY-BCN system by computing the portion of the monthly contract charge attributable to an average search, and adding average page charges to it.

TABLE VII

AVERAGE SEARCH COSTS IN SUNY-BCN SYSTEM
FOR PSYCHOLOGICAL ABSTRACTS SEARCHES

MONTH	MONTHLY CONTRACT CHARGE	% OF USE BY AVG. SEARCH	TIME COST FOR AVG. SEARCH	PAGE COST FOR AVG. SEARCH (b)	TOTAL COST FOR AVG. SEARCH
August	$875.17	0.9538	$ 8.35	$1.40	$ 9.75
September	875.17	0.6975	6.10	1.30	7.40
October	875.17	0.6583	5.76	.60	6.36
November	875.17	0.9041	7.91	.90	8.81
December	875.17	0.6163	5.39	1.10	6.49
January (1976)	875.17	1.5971	13.98	1.00	14.98

(b) Page costs are based on ten cents a page times the average number of pages per search, taken from TABLE III. The number of pages for each search was rounded up to the next whole number.

TABLE VIII

AVERAGE SEARCH COSTS IN SUNY-BCN SYSTEM FOR ERIC SEARCHES

MONTH	MONTHLY CONTRACT CHARGE	% OF USE BY AVG. SEARCH	TIME COST FOR AVG. SEARCH	PAGE COST FOR AVG. SEARCH (c)	TOTAL COST FOR AVG. SEARCH
July	$875.17	0.2569	$2.25	$1.70	$3.9[illegible]
August	875.17	0.3922	3.43	2.80	6.23
September	875.17	0.2820	2.47	2.20	4.67
October	875.17	0.1077	.94	1.00	1.94
November	589.17	0.3922	2.31	2.10	4.41
December	589.17	0.4975	2.93	2.30	5.23

(c) Page costs are based on ten cents a page times the average number of pages per search, taken from TABLE IV. The number of pages for each search was rounded up to the next whole number.

It was not yet possible to find search costs in commercial services, because of factors which still had to be determined and added in. These were the estimated costs of peripheral equipment and Tymshare or Telinet line charges, which had to be combined with data base rental charges. Peripheral equipment costs were estimated using the lowest figures shown in the charts in the Appendix: terminal rental, $75. per month, modem rental for two modems, $40. per month, with a $40. per month charge for one state service telephone line.[10] The percentages of use from TABLES V and VI for Psychological Abstracts and ERIC average searches were again used to determine the proportional amount of the total of estimated peripheral charges which had to be included in the search cost.

TABLE IX

PERIPHERAL EQUIPMENT CHARGES FOR AN AVERAGE PSYCHOLOGICAL ABSTRACTS SEARCH

MONTH	ESTIMATED PERIPHERAL CHARGES	% OF PSYCH. ABS. USE BY AVG. SEARCH	PERIPHERAL EQUIPMENT COST FOR AVG. SEARCH
August	$155.	0.9338	$1.48
September	155.	0.6975	1.08
October	155.	0.6583	1.02
November	155.	0.9041	1.40
December	155.	0.6163	.96
January (1976)	155.	1.5971	2.48

TABLE X

PERIPHERAL EQUIPMENT CHARGES FOR AN AVERAGE ERIC SEARCH

MONTH	ESTIMATED PERIPHERAL CHARGES	% OF ERIC USE BY AVG. SEARCH	PERIPHERAL EQUIPMENT COST FOR AVG. SEARCH
July	$155.	0.2569	$0.40
August	155.	0.3922	.61
September	155.	0.2820	.44
October	155.	0.1077	.17
November	155.	0.3922	.61
December	155.	0.4975	0.77

Computer connection times for an average search were taken from TABLE III and used to figure charges for Tymshare or Telinet and data base rental in the Lockheed Dialog system. In PASAR, the only charges that apply are a $20. processing fee and a $2. per minute search time.

TABLE XI

TYMSHARE OR TELINET AND DATA BASE RENTAL COSTS FOR AN AVERAGE PSYCHOLOGICAL ABSTRACTS SEARCH IN THE LOCKHEED DIALOG SYSTEM AND IN PASAR

MONTH	AVG. SEARCH TIME (d)	TYMSHARE OR TELINET CONNECTION (e)	DATA BASE COSTS IN LOCKHEED DIALOG (f)	TOTAL SEARCH COSTS IN PASAR (g)
August	0.26	$2.34	$13.00	$51.20
September	0.23	2.07	11.50	47.60
October	0.28	2.52	14.00	53.60
November	0.24	2.16	12.00	48.80
December	0.21	1.89	10.50	45.20
January (1976)	0.60	5.40	30.00	92.00

(d) Search times have been rounded to nearest hundredth of an hour since charges are figured on this basis.

(e) Figured at an average of $9. per hour.

(f) Psychological Abstracts rate, from Lockheed Dialog price sheet dated October 1975, is $50. per hour.

(g) Ms. Wilson, of PASAR, estimates the average search takes five to seven minutes. Actual search times were used in the table.

TABLE IV average search times were used to figure Tymshare or Telinet connections for both Lockheed Dialog and SDC, and to determine data base rental charges in the two systems.

TABLE XII

TYMSHARE OR TELINET AND DATA BASE RENTAL COSTS
FOR AN AVERAGE ERIC SEARCH IN THE
LOCKHEED DIALOG SYSTEM AND IN THE SDC SYSTEM

MONTH	AVG. SEARCH TIME (h)	TYMSHARE OR TELINET CONNECTION (i)	DATA BASE COSTS IN LOCKHEED DIALOG (j)	DATA BASE COSTS IN SDC (k)
July	0.08	$0.72	$2.00	$3.20
August	0.11	0.99	2.75	4.40
September	0.09	0.81	2.25	3.60
October	0.05	0.45	1.25	2.00
November	0.22	1.98	5.50	8.80
December	0.16	1.44	4.00	6.40

(h) Rounded to nearest hundredth.

(i) Figured at $9. per hour.

(j) Lockheed Dialog October 1975 price sheet lists cost of ERIC by hour as $25.

(k) SDC October 1975 price sheet lists ERIC cost at $40. per hour.

Figures needed yet were citation printout costs. In PASAR, citation costs were included in the search fees. Lockheed Dialog costs for Psychological Abstracts searches and for ERIC searches were determined by taking the average number of citations, rounded up to the next whole number, from TABLES III and IV. These were multiplied by ten cents per citation, as listed in Lockheed's October 1975 price sheet.

SDC charges for citations in ERIC were based on the average number of citations from TABLE IV, rounded up to the next whole number, and figured at twelve cents per citation, as listed in the October 1975 SDC price sheet.

It was now possible to combine costs of peripheral equipment and Tymshare or Telinet connection charges with search time and citation costs, to get the total cost of an average search in the different systems.

TABLE XIII

AVERAGE SEARCH COSTS IN LOCKHEED DIALOG
FOR PSYCHOLOGICAL ABSTRACTS SEARCHES

MONTH	PERIPHERALS AND TYMSHARE OR TELINET	AVG. SEARCH TIME COST	AVG. CITATION CHARGES	TOTAL COST IN LOCKHEED DIALOG
August	$3.82	$13.00	$2.40	$19.22
September	3.15	11.50	3.40	18.05
October	3.54	14.00	1.20	18.74
November	3.56	12.00	1.80	17.36
December	2.85	10.50	2.30	15.65
January (1976)	7.88	30.00	2.70	40.58

TABLE XIV

AVERAGE SEARCH COSTS IN LOCKHEED DIALOG
FOR ERIC SEARCHES

MONTH	PERIPHERALS AND TYMSHARE OR TELINET	AVG. SEARCH TIME COST	AVG. CITATION CHARGES	TOTAL COST IN LOCKHEED DIALOG
July	$1.12	$2.00	$5.70	$ 8.82
August	1.60	2.[illegible]5	5.20	.55
September	1.25	2.25	6.00	9.50
October	.62	1.25	5.20	7.07
November	2.59	5.50	5.80	13.89
December	2.21	4.00	5.90	12.11

TABLE XV

AVERAGE SEARCH COSTS IN SDC FOR ERIC SEARCHES

MONTH	PERIPHERALS AND TYMSHARE OR TELINET	AVG. SEARCH TIME COST	AVG. CITATION CHARGES	TOTAL COST IN SDC
July	$1.12	$3.20	$6.84	$11.16
August	1.60	4.40	6.24	12.24
September	1.25	.3.60	7.20	12.05
October	.62	2.00	6.24	8.86
November	2.59	8.80	6.96	18.35
December	2.21	6.40	7.08	15.69

Comparing average search costs in the different systems was now possible.

TABLE XVI

A COMPARISON OF ACTUAL AND SIMULATED SEARCH COSTS FOR AN AVERAGE SEARCH IN PSYCHOLOGICAL ABSTRACTS

MONTH	SUNY-BCN	LOCKHEED DIALOG	PASAR
August 1975	$ 9.75	$19.22	$51.20
September	7.40	18.05	47.60
October	6.36	18.74	53.60
November	8.81	17.36	48.80
December	6.49	15.65	45.20
January 1976	14.98	40.58	92.00

TABLE XVII

A COMPARISON OF ACTUAL AND SIMULATED SEARCH COSTS FOR AN AVERAGE SEARCH IN ERIC

MONTH	SUNY-BCN	LOCKHEED DIALOG	SDC
July	$3.95	$ 8.82	$11.16
August	6.23	9.55	12.24
September	4.67	9.50	12.05
October	1.94	7.07	8.86
November	4.41	13.89	18.35
December	5.23	12.11	15.69

The results, as expected, showed that search costs in either data base were consistently lower in the SUNY-BCN system, which had the added benefit to the user that it provided dedicated line service.

Future studies in several areas would be useful. The State Library could minimize costs by increasing terminal use time. Tabulating search request sources would identify present user groups and indicate by their absence user groups to whom publicity should be directed. EPSIS, with its terminal already heavily used, might benefit from studies on maximizing entry and search strategy efficiency so that it would be able to handle an increasing number of searches without having to pay for hours in excess of contract time.

Recommendations to the State Library based on this study are:

1. that it should continue with the SUNY-BCN service, and
2. since Lockheed Dialog offers a multiplicity of bases which are not available through SUNY-BCN and has exclusive rights to some data bases,[11] that the State Library should join Lockheed Dialog as soon as funds are available. The possibility of leasing another terminal and modem from SUNY-BCN to be used for a connection with Lockheed Dialog should be investigated. If Central Administration policy does not permit this, commercial interests should be contacted to get some precise figures on terminal and modem rental costs. The connection with Lockheed Dialog should be used only for such data bases as are not available through SUNY-BCN. A further recommendation is that clients should be charged

for these searches and the rate schedule should provide for a surcharge to be used for development and refinement of the search and retrieval systems at the State Library.

Costs for setting up such an additional service, together with the peripheral charges, will not be immediately recoverable. Techniques such as spot advertising, newsletters, and personal contact with potential clients such as the banking industry will help the service build the volume necessary to minimize peripheral charges. Training of staff will be a major factor, but such training in search strategy as is done should be as much as possible on the fixed-fee SUNY-BCN service, to keep the costs of the commercial service mainly attributable to clients from whom costs can be recovered.

In summary, a comparison of costs for computer-based searching of Psychological Abstracts and ERIC was produced by combining data available from search request forms and from bills from the contract subscription service, SUNY-BCN. These data were used to figure costs in commercial pricing systems. Charges for peripheral equipment, which are included in the contract fee, were prorated according to the ratio of use of each data base against the total use for all data bases. Estimates were obtained for comparable peripheral equipment, adjusted for percentage of time used, and added to search costs to complete the comparison. Differences in access to the computer were pointed out, and it was recommended that the State Library remain with the SUNY-BCN system while also planning to join the Lockheed Dialog system for data bases not available from SUNY-BCN as soon as

start-up funds permit. A fee schedule including a surcharge for development and refinement of search and retrieval procedures was also recommended.

FOOTNOTES

1. Off-line refers to material produced during evenings or weekends at the computer center and later delivered to the user.

2. The number of citations per page varies according to the length and complexity of the citation or abstract.

3. Acronym used by the State University of New York Central Administration's Bio-Communication Network.

4. Lease, at $3,000. per year, is possible where lessee serves an exclusive community; license, $800. per year, plus minimum charge of $20. per connect hour permits licensee to serve any client.

5. The data base ERIC was used by both State Library for searches requested by the public, and EPSIS (Educational Programs and Studies Information Service), for searches done for school districts in New York State. Different user numbers identified the portion of the bill for which either group was responsible. In November 1975 EPSIS got its own terminal and user contract, and has been billed separately since then.

6. Different types and speeds are available; basically, most are similar to a TWX or an electric typewriter.

7. The modem modulates and demodulates transmissions between the computer and the terminal.

8. In a conversation on April 9, 1976, Mr. Peter Balint of the New York Telephone Company Sales Department told the writer that line costs depend on how a user divides a line within his own organization. For example, one duplex line could be leased and divided internally into several different lines with different uses. This would cost considerably less per individual telephone line.

9. Entry into the computer is through a port. The dedicated line is always in connection with the port, but with the dial-up line another user could already be connected. Until this user ended the connection, a busy signal would be heard when the number is dialed.

10. The price for the state service telephone line was quoted to the writer by Mr. J. VanderVeer Judd, Coordinator of Library Automation Service, State Library, in a conversation in April, 1976.

11. Examples of data bases to which Lockheed Dialog had exclusive commercial rights as of October 1975 are Oceanic Abstracts, Physics Abstracts, Exceptional Child Education Abstracts. Non-commercial groups such as SUNY-BCN could probably get these data bases, but would have to meet specific requirements such as those explained briefly in footnote 4.

COMPARISON CHART I

DATA BASE RENTAL

	SUNY-BCN	LOCKHEED DIALOG	SDC	PASAR
MEMBERSHIP OR PROCESSING FEE	$4,000. yearly per terminal	none	none	$20. per search [bb]
DATA BASE SUBSCRIPTION FEE OR HOURLY USE CHARGE	ERIC $1,500. per year Psych. Abs. $2,000. per year and 10¢ per page (1975 contract) [aa]	ERIC $25. per hour Psych. Abs. $50. per hour and 10¢ per citation (price sheet dated Oct. 1975)	ERIC $40. per hour and 12¢ per citation (price sheet dated Oct. 1975) Psych. Abs. not available	$ 2. per minute [bb]

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[aa] 1976 subscription fees are different; lease costs to the SUNY-BCN system from Psychological Abstracts are higher and the SUNY-BCN member contracts now include an hourly use charge in addition to the subscription fee.

[bb] Telephone conversation with Ms. Wilson of Psychological Abstracts, May 3, 1976.

COMPARISON CHART II

TELEPHONE CONNECTIONS

	SUNY-BCN	LOCKHEED DIALOG	SDC	PASAR
TYMSHARE OR TELINET [cc]	none	$10. per hour for Tymshare, $8. per hour for Telinet	$11. per hour for Tymshare, no data on Telinet	none
TELEPHONE LINE CONNECTION TO COMPUTER PORT [dd]: OR TO TYMSHARE OR TELINET	.65 per mile per month; for State Library location, $74. per year for each terminal	tie-line or long distance charges to Tymshare or Telinet location	tie-line or long distance charges to Tymshare location	none

[cc] Tymshare locations include District of Columbia, New York City, Rochester, Syracuse, Buffalo; Telinet locations District of Columbia and New York City.

[dd] Telephone company charges for initial physical connection to computer hardware must also be added. The user pays these one-time charges.

COMPARISON CHART III

PERIPHERAL EQUIPMENT

	SUNY-BCN	LOCKHEED DIALOG	SDC	PASAR
MODEM RENTAL	$300. per year at State Library location [ee]	At least $480. per year [ff] plus installation costs	At least $480. per year [ff] plus installation costs	none
TERMINAL AND SLAVE PRINTER RENTAL	Univac DCT-500 $1,128. per yr. NCR Portable $840. per year [gg]	Range $75. to $230. per month for comparable equipment [hh] and [ii]	Range $75. to $230 per month for comparable equipment [hh]	none

[ee] Only one modem is needed at the State Library location because the computer is close. Two would be required, one at each end of the line connecting terminal and computer in other locations. Cost is from SUNY-BCN contracts.

[ff] Cost estimate made by Mr. J. VanderVeer Judd, Coordinator of Library Automation, State Library.

[gg] Costs are from SUNY-BCN contracts.

[hh] Cost estimates made by Mr. Peter Balint, New York Telephone Company.

[ii] Mr. Richard P. Caputo, Lockheed Dialog Washington, D.C. office, says dedicated line service (i.e., a connection to a computer port) is possible with their service. He estimates rental charges for line, terminal and slave printer at approximately $500. to $600. per month.

COMPARISON CHART IV

MANUALS AND TRAINING

	SUNY-BCN	LOCKHEED DIALOG	SDC	PASAR
MANUALS	Included in subscription fee	$10., updates free [jj]	First copy free, no data on cost for extras	Not necessary, but available $12. per copy
TRAINING	Included in subscription fee	$50. per person for 1 1/2 day basic course; $50. per day per person at Lockheed Dialog locations, at user's location by arrangement	$50. per person for 1 1/2 day basic course; $50. per day per person at SDC locations, at user's location by arrangement	None

[jj] Lockheed Dialog literature claims all bases available through Dialog can be accessed and used with one manual. As new data bases are added to their holdings, the user manual is updated free of charge.

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